

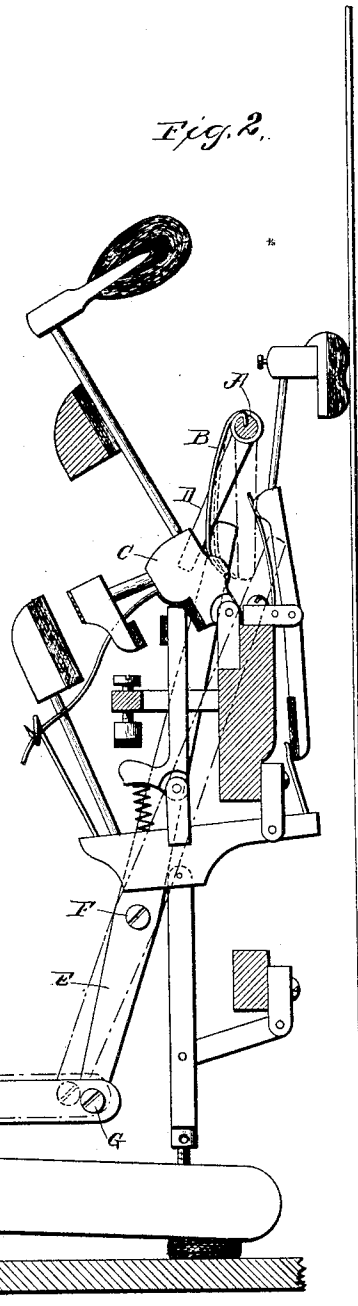
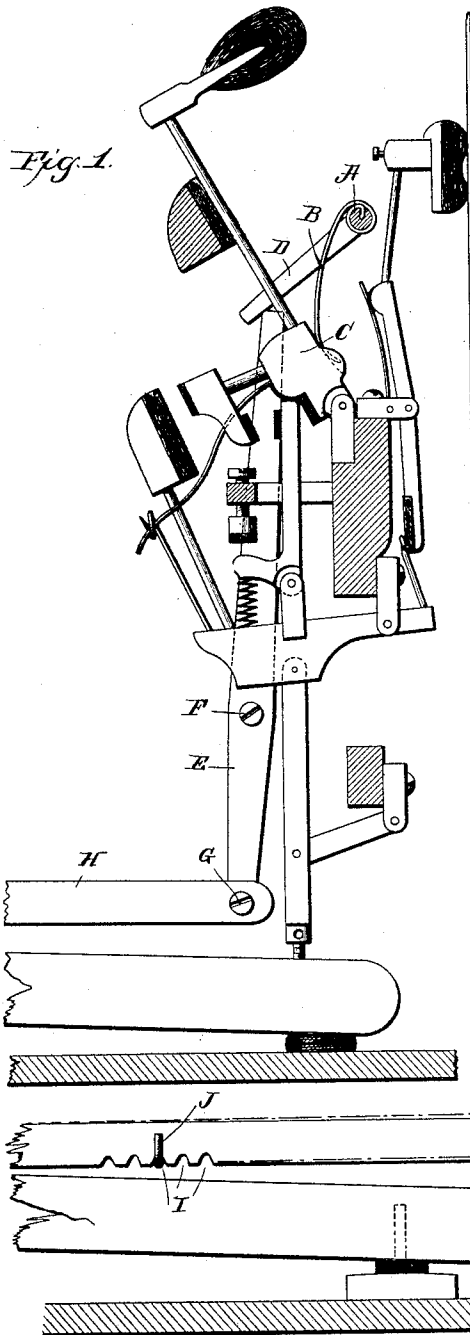
(No Model.)

F. LINDHOLM & C. PICARD.

MECHANISM FOR VARYING THE TOUCH OF PIANO ACTIONS.

No. 579,801.

Patented Mar. 30, 1897.



WITNESSES:

Ed. W. Durman
J. Williamson

INVENTORS

Frank Lindholm
Charles Picard

B

BY *Geo. H. Holgate*
ATTORNEY

ATTORNEY.

UNITED STATES PATENT OFFICE.

FRANK LINDHOLM AND CHARLES PICARD, OF WOODBURY, NEW JERSEY.

MECHANISM FOR VARYING THE TOUCH OF PIANO-ACTIONS.

SPECIFICATION forming part of Letters Patent No. 579,801, dated March 30, 1897.

Application filed November 6, 1896. Serial No. 611,265. (No model.)

To all whom it may concern:

Be it known that we, FRANK LINDHOLM and CHARLES PICARD, citizens of the United States, residing at Woodbury, in the county of Gloucester and State of New Jersey, have invented a certain new and useful Improvement in Mechanism for Varying the Touch of Piano-Actions, of which the following is a specification.

Our invention relates to a new and useful mechanism for varying the touch of piano-actions, and has for its object to provide a simple arrangement terminating in convenient reach of a performer when sitting at a piano whereby said performer may instantaneously change the tension upon the hammers of the piano, thereby offering greater or less resistance to their manipulation by the keys, with the consequent result of making the action soft or hard, as desired.

It is a well-known fact that no two performers desire to use the same strength of touch when performing upon a piano, but as now constructed a piano-action must be adjusted when the instrument is manufactured to suit the requirements of the particular player that is supposed to use the same, and this adjustment cannot be changed without the complete overhauling of the piano-action, and therefore the piano is not well adapted for use but by the person for whom it was originally adjusted; and this is obviously a serious disadvantage, since often a number of persons perform upon the same instrument, each one preferring a different strength of touch, and it is therefore very desirable that a performer be able to regulate the touch of the action to suit his or her particular requirement, and this is accomplished by our improvement with but little or no additional expense to the cost of manufacture.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, its construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a section of a piano-action, showing one hammer and the various parts working in conjunction therewith and illustrating

the application of our improvement to this hammer with the maximum tension sustained thereon; and Fig. 2, a similar view showing the minimum tension sustained by our improvement upon the hammer.

In carrying out our improvement as here embodied we utilize the rail A, which is usually rectangular in cross-section, but is here shown as round and which is by us preferred, and within this rail are inserted the springs B, which are equal in number and correspond in position to the hammers of the piano, and these springs project downward and bear against the inner surface of the hammer-block C, as clearly shown, from which it will be obvious that the tension of each of the hammers will be in accordance with the tension of the springs B. Therefore it is only necessary to vary the tension of these springs to vary the resistance offered to the movements of the hammers, and this is accomplished in the following manner:

An arm D is secured to the rail in such manner as to turn the latter upon its axis, said rail having bearings in the framework of the piano, so as to permit this turning. A lever E is pivoted at F and projecting upward terminates in contact with the inner surface of the arm D, so as to retain the arm against the action of the springs B, and this lever in turn has pivoted at G to its lower end a bar H, said bar projecting outward and terminating in convenient reach of a performer sitting at the piano, and also being provided with a series of notches I, adapted to enter into engagement with the pin J, which pin is secured to some portion of the framework of the piano. By this arrangement it will be seen that to loosen the tension upon the hammers it is only necessary to disengage the bar from the pin J and move it outward, thereby swinging the lower end of the lever E in this direction while carrying the upper end thereof inward, which will permit the arm D also to move inward, thereby slacking the tension upon the springs B, which will then offer less resistance to the movements of the hammers. This variance of the tension of the springs may be had from the two extremes, one of which is indicated in Fig. 1, where the maximum tension is had

upon the hammers, while the other is indicated in dotted lines in Fig. 2, where the minimum action is had.

5 A person contemplating performing upon a piano fitted with our improvement has only to try the touch of the keys and then adjust the tension thereon by the proper movement of the bar H to adapt the touch to his or her particular fancy.

10 The cost of applying our improvement to a piano is very small, since the rail A is only a modified form of the rail which is already used, so that the only additions are the arm D, lever E, bar H, and pin J, all of which are
15 simple and easy of construction, while a great advantage is gained by our improvement.

While we have here shown a series of springs bearing directly against the hammer-block, it is obvious that a spring action may
20 be given to the hammer-action at any point, the only requisite being that means be provided for increasing or decreasing the tension of said springs upon the hammer-action in order to increase or decrease the touch of
25 the keys.

Having thus fully described our invention, what we claim as new and useful is—

1. In combination with a piano-action, a bar adjustable forward and backward, a lever pivoted at one end to the bar, a rail journaled
30 in the piano-frame, an arm on the rail terminating in contact with the lever and springs carried by the rail bearing against the hammers, as and for the purpose described.

2. In combination with a piano-action, a
35 rail adapted to turn upon its axis, a series of springs carried by said rail and bearing against the blocks of the hammers, an arm projecting from the rail, a lever arranged to
40 operate the arm in one direction against the action of the springs, a bar pivoted to the lower end of the lever having a series of notches formed therein, and a pin with which
45 said notches are adapted to engage for holding the lever in any adjustment, as specified.

In testimony whereof we have hereunto affixed our signatures in the presence of two subscribing witnesses.

FRANK LINDHOLM.
CHARLES PICARD.

Witnesses:

S. S. WILLIAMSON,
MARK BUFORD.